A STUDY OF IMPROVISATION IN THE TEACHING OF HOME MANAGEMENT IN SECONDARY SCHOOLS IN FOUR DISTRICTS OF KENYA

E.N. THINWA

A RESEARCH REPORT SUBMITTED TO THE INTERNATIONAL DEVELOPMENT RESEARCH CENTRE (IDRC) UNDER THE KENYA, UGANDA, TANZANIA EDUCATIONAL RESEARCH AWARDS (KUTERA) SCHEME.

DECEMBER, 1990

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ABSTRACT

The major aim of Home Science is to impart skills that are relevant to the needs and circumstances of the students. However, the large number of enrolment in Secondary Schools has resulted in lack of teaching resources. This has shifted the emphasis in the curriculum to improvisation as a probable solution.

However, the extent to which the teachers are improvising when teaching the subject has not been investigated. In addition, the factors associated with a lot of improvisation and the most appropriate alternatives have not been documented.

In order to evaluate the Current Status of improvisation in Schools, a survey was carried out in forty schools, from four districts of Kenya, namely Murang'a, Nyeri, Kiambu and Nakuru.

The data analysis revealed that there is improvisation going on in schools but the level of improvisation is lower in schools offering the subject up to form II.

In summary, the study concluded that improvisation should be encouraged in order to create students with an inquiring mind and who are aware of various alternatives in their environment. A number of recommendations were made for further research in this area.

CHAPTER 1

BACKGROUND OF THE RESEARCH PROBLEM

1.1. Introduction and Justification

From the missionary days the teaching of Home Science, and in particular Home Management, at either primary or secondary levels was seen as panacea for rural and community development in Kenya. However, the realisation of this aim is not easily conceivable, since the curriculum is still highly western oriented (Mbae, 1985) and only favours the affluent sector of the Kenyan population. This has created great concern since most of the rural children who complete the course do not apply the acquired principles and skills, owing to the fact that, the facilities and the type of foods they were exposed to in school are not available at home (Thinwa, 1987); nor are they adequate or appropriate (Kasuku, 1984).

Thinwa (1987, p.2) has cited the reason for this lag, as due to The teachers' failure to develop the ability to improvise where necessary to suit the children's needs. Mbae (1984, p.26) has also claimed that Home Management could have been more popular and accepted in schools if the teachers created more interest in the subject by teaching using materials that are relevant to the needs, hopes and circumstances of the students. That is, the teachers should try to expose the students to local facilities and materials which they can use as substitute for modern facilities. The greatest problem teachers are experiencing in teaching Home Management is the lack of funds to purchase the equipment and materials, although the 8-4-4- Home Science syllabus has greatly emphasised on the practical work.

This problem has resulted from lack of funds to purchase the equipment and materials, to cope with the ever growing enrolments in our schools, the increasing cost of the items and lack of spare parts. It has therefore become difficult for the government to equip the schools, (Sunday Nation, March 23rd, 1986 p.32).

Improvisation in the teaching of Home Science has been emphasised in the 8-4-4 Home Science Syllabus (K.I.E., 1985) where one of the general aims of the course is to develop the ability of the learners to improvise on resources where necessary. The achievement of this aim would in the long-run make the subject relevant to the interests and needs of the learners as well as their community, and also facilitate optimum acquisition of the relevant skills at a relatively low cost (Thinwa, Op.Cit, p.3). However, the extent to which the teachers have achieved this goal in our secondary schools has not been established.

1.2 Statement of the Problem

Although teachers are aware of the major aim of the Curriculum, (create students with an inquiring mind and who are aware of the number of alternatives in their environment, to modern technologies which are simple and cheap), very few teachers seem to improvise when teaching Home Management. However, if this is happening there is no documentation of the various improvisations in the subject, that are going on in our schools. In addition to the absence of evidence for improvisation, the factors that would be associated with a lot of improvisation in this area have not yet been investigated.

Furthermore, it is observed that the wrong mentality towards local foods and equipment should be eliminated. This could be achieved by localizing the textbooks and putting less emphasis on Western facilities in teaching. Thus, this study was directed to these problems, and the above issues were taken into consideration in the design of this study.

Therefore, the purpose of the research was two fold: (1) to carry out a survey of the various improvisations which are currently being used for teaching some aspects of Home Management, and (2) to recommend to the relevant authorities, in the light of the review of literature:

(a) the probable and relevant alternatives to the currently used modern facilities for teaching various aspects of Home Management, and

(b) the ways Home Management could be made relevant to the future needs of the rural children who form the bulk of Kenyan students in our Secondary Schools.

1.3 Research Questions

In order to collect information that would assist in the realization of the above aims, answers to the following questions were sought:

I Questions about Teachers' factors:

- What teacher characteristics boost improvisation when teaching Home Management. i.e. Professional grade, length of schooling?
- Do the years of experience of the teachers help to raise the level of improvisation when teaching

Home Management?

- What problems do teachers face when teaching the specified areas of Home Management?.

II. Questions about School Factors:

- What is the effect of the length of time the school has offered the Home Management subject on the improvisation when teaching the subject?
- Has the increased size of Home Management classes in our secondary schools led teachers to improvise?
- What is the effect of the type of school on improvisation when teaching Home Management course?
- Is there any improvisation in our secondary schools when teaching the specified aspects of Home Management?

III Questions on relevance of Home Management knowledge to the student and his community

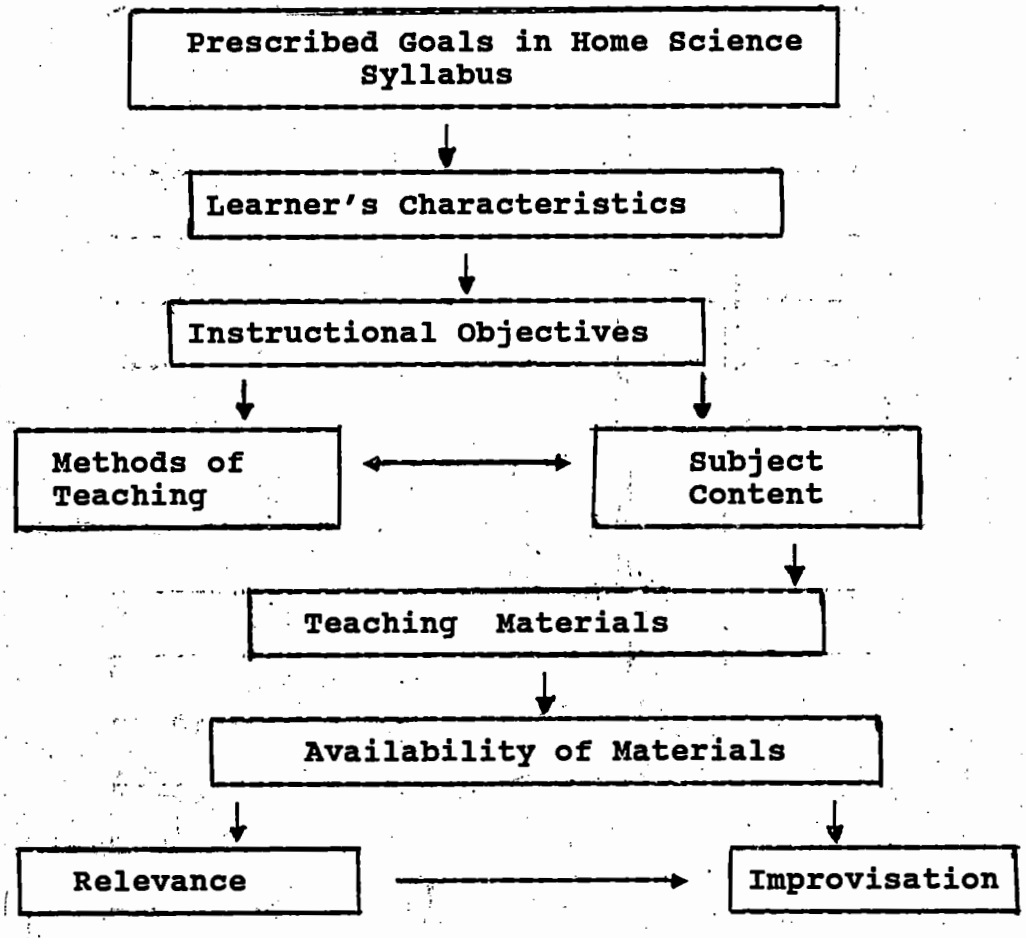
- In what ways could Home Management be made relevant to the needs of the students after they leave school?

CHAPTER 2

REVIEW OF RELATED LITERATURE

2.1 Conceptual Framework for Improvisation

A review of literature on improvisation in the teaching of Home Management in developing countries, indicate that characteristics of the learner; subject content; teaching methods for Home Management; materials and equipment; availability of materials and equipment; and the relevance of Home Management to the needs of the learner, are significant determinants of improvisation. A conceptual framework that shows the relationship between the basic components of the teaching process and improvisation is shown below.



According to this model, improvisation results from lack of teaching materials or if the available materials are irrelevant to the learners or the learning situation.

2.2 Characteristics of the Learner

One general accusation that can be levelled against the majority of the Home Science teachers is that, they expect learners to have the same Socio-cultural and economic characteristics and the learning situation of each child to be the same. But, as Callahan (1971); Heinich, et. al., (1985); Kemp (1977) and Mukwa & Otieno Jowi (1984), have noted, the initial step towards a successful Instruction, should be the analysis of the learners' characteristics. Our Secondary school pupils are either from rural or urban backgrounds and therefore, there are such considerable differences, Socio-culturally and economically that, they should be considered when planning a Home Science instruction. Such awareness would assist the teacher three fold: when determining the teaching materials, subject content, and when choosing familiar and meaningful examples that are appropriate to the particular learner (i.e. Callahan, 1971; Hall & Paolucci, 1970, and Heinich et. al., 1985), established a match between the learners' characteristics and the materials as well as the methods of teaching (Heinich et. al. 1985). Secondly, the economic status of the majority of the students in the class, and the range of background experiences for each student, should be understood so as to gear the teaching of Home Science towards seeking solutions to the community needs.

Hall & Paolucci (1970) remarked that, the success of Home Science programme depended upon the needs of the community, which

are then determined by the interests and the needs of students, the expectation of the parents, and also the attitudes of the other member of the community. Thus, the teachers should investigate the social groups within the environs of the school, to find out their problems, concepts, ideas, dominant values, as well as their practice (Sigot, 1986). Such awareness would help the teacher in providing learning activities which would be closely related to the resources available in the community which would be incorporated into the school experiences to reinforce and enrich the students' learning activities (Sigot, 1986).

In summary, understanding of the learners' characteristics therefore, would direct the teacher in the selection of topics and the level of introducing such topics. It would also help in the choice and sequencing of objectives, the details which are required in a topic, and the variety of learning activities. Finally, it would dictate whether improvisation is necessary, depending on the appropriateness and the availability of the materials.

2.3 Availability of Materials and Equipment for teaching Home Management

Home Management being a practical subject requires adequate and appropriate facilities for effective teaching. Gachathi Report (1976) had cautioned that the success of such practical subjects entails relevant and adequate teaching and learning equipment and classroom facilities. However, official reports, for example from Provincial Education Officer for Central Province, (1986) have shown that Home Management is not being taught in some schools, due to the facilities and equipment being

very expensive. Sigot (1986) also noted that, many schools had unsuitably equipped Home Science Laboratories, a phenomenon which greatly hindered the effective teaching process.

Kasuku (1984) had also found out that the necessary facilities for effective teaching of Home Management are in adequate and inappropriate in the schools offering it. This has led to efficient students failing in their practicals during examinations. The reasons for such crucial problem are: lack of enough money to buy these expensive laboratory equipment, expense of spare parts and use of out-dated models which cannot be repaired (Kasuku, 1984, p.28). The Government (see Nation, March 23rd 1986, p.32) has clearly indicted that it cannot be able to meet wholly the expenses of equipping the Home Science laboratories in all our Secondary Schools. This implies then that, it is necessary to seek solutions to such problems by improvising some of the equipment and materials, using the locally available ones which are cheap. Kyalo (1984), has also expressed the need to use the appropriate technologies which are relevant to the interests and needs of the learners as well as those of their community, and they facilitate optimum learning at a relatively low-cost. However, no attempt have been made to carry out a survey of the various alternatives which can substitute the modern facilities which are expensive and some times irrelevant to the needs of the students.

2.4 Relevant of Home Management to the need of the students

Various studies (e.g. Eshiwani, 1984; Mbae, 1984; Kasuku, 1984; and Muthui, 1980), have expressed widespread dissatisfaction with the existing Home Science Curriculum. The

major concern is about the inadequate and irrelevance of the materials covered in this subject in our Schools. Mbae's (1984) study indicted more children from rural schools, noted that the subject was not useful to them in their present home environment. This low acceptability is due to the subject being highly Western oriented in some aspects (Kasuku, 1984; Sigot, 1986), and thus, needed to be africanised to fit the local situation and low income families.

Sigot (1986) made suggestions for making Home Science relevant to needs of students as emphasis be on local equipment, materials and resources that are relevant to their home situation. Secondly, curriculum to be made more realistic so as to emphasise locally available materials, and that the textbooks should be localized, appropriate and easy to read (p.88). These imply that the subject would be more applicable to most rural homes. That is, the subject should be relevant in content, to everyday life, so that there is an increase in interest on the part of the students.

Although this concern has been clearly indicated, no attempt has been made to investigate the various alternatives (improvisations) which the teacher could seek which are relevant in terms of cost and familiarity.

2.5 Improvisation in Teaching some aspects of Home Management

The general emphasis on making the student more practically oriented, as expressed in the 8-4-4 system of Education (8-4-4 system of Education 1984, p.20) is being undermined by current lack of relevant materials and equipment in our schools. This raises the question, of how well this objective can be realized without

alternatives being sought. Thinwa (1987, p.30) has noted that the teachers of Home Management therefore, should improvise materials and equipment and that the alternative chosen should be in line with the kind of system we are in. They should take into account our needs based on the local and available resources Thus, Kapiyo (1983) recommends that the students and teachers be involved in a "do-it-yourself", activities, which are quite useful even for their future needs.

Other concerns on improvisation in the various aspects of Home Management have also been strongly indicated. Home Science Syllabus (K.I.E. 1985) has expressed the need for alot of improvisation when teaching Home Science. However, Wambui (1986) argued that although teachers were supposed to improvise, the issue was superficially tackled during the 8-4-4 inservice course and the teachers were left in the dark as to which type of materials and equipment could be used as substitutes for each aspect of Home Science. Thus, a study is needed to find out the various improvisations which teachers would make when teaching each aspect of Home Management or Home Science in general.

2.6 Meal Management

Various reports (Joseph, 1978; and Sigot, 1986) have shown that teaching of Meal management should be geared to the local needs of the students in terms of the books used, the food choices (particularly those in rural areas) and practices in food preparation and nutrition. Sigot (1986), says that the students should be exposed to locally available foodstuffs since they are cheap and could in future help their respective communities to appreciate them. Another suggestion is on the use of foods in

season since they are normally cheaper, more easily available and fresh (Teachers' Guide for Forms I and II Home Science, K.I.E., (1986). Joseph (1978), Olaolaore (1980) have suggested the use of local substitutes, for example, locusts, grasshoppers, flying ants etc. for their proteins and calcium; or use of local carbohydrate and vitamin food sources, instead of the other expensive food items which are bought in shops. The extent to which local foods have been incorporated into the teaching of Meal Management in our Schools, is still not known.

2.7 Methods of Food Preservation

A review of literature indicates that most of the food shortage that both our rural and urban population, experience are due to poor methods of preservation either during the season or post-harvest period. Although, various inexpensive methods have been proposed, for example, the charcoal cooler (Mbae, 1984; Gitobu, 1985), Dry, salting and smoking - for meat preservation; (Joseph, 1978, Ndungi, 1982; Were, 1986), the traditional granaries for the storage of grains and legumes (Mugo, 1985) and many others for preserving fruits and vegetables (Joseph, 1978; and Koeune, 1974), the extend to which they are emphasised in our secondary schools, so as to improve the diet of the people in both rural and urban areas has not been investigated. Thus, there is need to investigate the different methods which could be used as alternatives in Home Science classrooms and in the home.

2.8 Water Purification and Storage

The acceptability of clean and sufficient water is of crucial importance for family health. However, many parts of the country particularly the rural areas experience water shortage, even

though a number of inexpensive methods for purification and storage have been proposed. For example, filtering and boiling (Johnston, 1974; Koeune, 1978), sedimentation (K.I.E., 1986), and easily constructed water jars for storage. It is therefore necessary to find out how Home Science teachers are tackling this type of problem, and the alternative methods that they emphasise in order to assist the rural population.

2.9 Cleaning Materials and Equipment

A number of inexpensive cleaning materials which would be appropriate for our rural households, have been proposed in the literature. For example, brooms and brushes - from grass, twigs, millet, and coconut mid-ribs (Johnson, 1974; Gitobu, 1985; Were, 1986; K.I.E., 1986), cob-web brushes - substituted with feathers or old pieces of cloths (Gitobu, 1985; and Were, 1986) and, ashes and fine sand - as abbrassives (Gitobu, 1985; and Were, 1986) appears that alot of improvisation of cleaning materials is documented. However, it has not yet been established, whether the Home Science teachers are using them when teaching in our Secondary Schools.

2.10 Kitchen Equipment

With the rise of the cost of most kitchen equipment, it has become necessary to improvise, by making most apparatus at home using suitable materials in the locality. For example, clay pots - in case of sauce pans (Koeune, 1974), Kimbo and Margarine tins, debe for graters and baking respectively. K.I.E., (1986), KENGO news (1985) and Kamau (1986) advocate local cooking stoves (burning stove, and jiko), and Biogas for cooking. Although, such viable alternative methods are efficient and could be used

to teach this aspect even in the remotest parts of the country, the extent to which Home Science teachers are emphasising their due to students, is not known. In summary, it has been noted from foregoing review of literature that, there are numerous alternatives that the teachers of Home Management would seek, in case modern facilities were lacking. Reference of such improvised materials, would well assist in the creation of positive attitude among the students towards their use when they leave school. However, there is no study which has addressed itself to the factors that may be associated with improvisation in this area. Furthermore, it is observed that the wrong mentality towards local foods and equipment, should be eliminated. This could be achieved by localising the textbooks and putting less emphasis on western facilities in teaching. Thus, this study should be directed to these problems, and in addition, the above issues be taken into consideration in the design of the study to follow.

CHAPTER 3

METHODOLOGY OF THE STUDY

3.1 Research Design

The basic methodological assumption behind the research design that was applied was that, the real issues appertaining to the improvisation in a Home Management class could best be understood when the teacher and school factors are analysed within their local setting.

Based on this assumption, forty secondary schools (See Appendix 2), ten from each district, were selected for the study from Kiambu, Murang'a, Nyeri and Nakuru districts. The forty schools were both from rural and urban settings. Other six schools, selected at random from the same districts, were used for piloting the research Instrument. This purposeful selection of districts does not claim to be representative nation-wide but should allow for the analysis of variations in the teaching of Home Management and the level of improvisation in the different schools.

3.2 Target Population and Sample Selection

The general target group of the study were all the secondary school Home Management teachers from the four districts. However, in order to keep the number to be interviewed manageable, it was decided that only those teachers from schools near the road from Kiambu, Murang'a, Nyeri and Nakuru Districts, respectively, were selected. On the basis of the records from District Education Offices (D.E.O's) of the respective districts, the names of forty six schools to be visited were identified. A pilot study was done with other six of the schools, in order to

improve the research instrument, whose final version was used for the main study, with the other forty schools (see Appendix 1).

3.3 Collection of Data

In order to collect data for this study, survey method was chosen due to its wide applicability as a date collection methods in social sciences. Secondly, Kerlinger (1973), has also shown that, the method has the advantage in that, it requires a relatively short time, and is inexpensive.

The survey then, comprised of the administration of a questionnaire, to the teachers from the selected schools.

3.3.1 Teachers' Questionnaire

The questionnaire had seven parts. Part 1, - items seeking the demographic information about the respondent, characteristics of the school which may be related to the amount of improvisation done by the teachers in a given school, problems faced when teaching specified aspects of Home Management, and suggestions on how the subject could be made relevant to the needs of the students.

Parts (2-7) of the questionnaire sought information on the various improvisations as related to some aspects of Home Management i.e Meal Management, Food preservation and Storage, Water Purification and storage, cleaning materials and equipment, Kitchen Equipment.

In order to ensure the reliability of this questionnaire a pilot study was carried out.

3.3.2 Data Collection Procedures

The researcher with the help of trained research assistants

administered the instruments and made sure they were well understood by the respondents.

To ensure the availability of the required respondents in a particular school, letters were sent to the respective school heads, spelling the time of the visit and who would be seen.

3.3.3 Pilot Study

The pilot study consisted of the administration of a draft questionnaire which had the desired information. The information from the pilot study was then used to revise the questionnaire for the main study.

The sample for the pilot study was drawn from the selected schools, but not part of the sample for the main study, for each District.

3.4 Data Analysis

The collected data was analysed through qualitative and quantative methods, in order to provide answers to the stated research questions.

Statistical techniques were also applied appropriately in order to assist in the interpretation of the result. For example, Frequency distribution tables, and graphs were used to reveal some of the factors associated with alot of improvisation.

Finally, in order to establish how much improvisation was done for the specified aspect of Home Management, the responses were scored using a 3 - point scale, as follows:

i) 3-points, for those respondents who improvise practically.

ii) 2-points, for those who tell students the type of improvisations they could make but do not provide practical experience.

iii) 1-point, for those respondents with an idea, but do not implement it in class.

iv) 0-point, for those without any idea at all for the type of improvisation they would make.

3.5 Significance of the Study

This study had both theoretical and practical importance:

Theoretical significance

It was anticipated that the survey would reveal the current picture of improvisation, when teaching Home Management, in the Kenyan Secondary Schools, and also provide information to the existing literature on improvisation.

Practical significance

1. The findings of this study would help teachers to incorporate local materials in designing their instructional programmes and to know the type of alternatives that are available. That is, the knowledge was used as a guide in planning and in the preparation of teaching presentations.
2. The findings of this study will provide a resource book for the teachers to enable them develop a creative mind, and awareness, so that their pupils could use this knowledge to their advantage, in view of local variations and requirements. In this way the subject will be useful and meaningful to the learners.
3. The applicability of the study will be extended to extension workers, Home Economists and other involved in rural development programmes when preparing lesson plans, lectures, demonstrations and home visits.
4. The curriculum designers and the inspectorate will also benefit from the study especially when seeking ways of

making the subject relevant to the needs of the learners. The findings of the study will assist in the development of the curriculum for Home Science when it comes to rectifying certain important decisions on the organisation of resources.

5. The study hopes that the findings will encourage the teachers and students to utilize the available local resources and even for their future.
6. The findings of this study will expose to the people, the various resources (local materials) which can be utilized as substitutes for modern facilities and make them aware of the existence of such devices in their community, hence in the long run improve their living standards.
7. It is hoped that the study will encourage further research to be conducted to gain more understanding of local materials which could be used as substitutes for modern facilities not only in Home Management but also in other science subjects.

CHAPTER 4

MAJOR FINDINGS

4.1 Introduction

The major findings of the research are briefly summarized and commented upon hereafter. This was done by analysing successively the information collected from the interviews with the teachers regarding level of improvisation when teaching Home Management; factors encouraging improvisation in teaching Home Management; agreed alternatives for teaching some aspects of Home Management; problems faced when teaching Home Management, and the ways of making Home Management relevant to the needs of the students.

4.2 Level of Improvisation when teaching Home Management

The analysis of data collected on how much teachers were improvising when teaching the specified aspects of Home Management shows that relatively, teachers tended to improvise more when dealing with the topic of 'Cleaning materials and equipment', followed by the topics of 'foods' and 'water purification and storage', and lastly 'food preservation.'

Considering each aspect specifically, the data further indicated the highest level of improvisation in the topic of cleaning materials and equipment to be in the areas of sweeping; then abbrassives, and removal of cobwebs as well as mops and floor rugs. Under this topic, the areas where least improvisation was observed were cleaning bottles and use of disinfectants in pit latrines. In case of the topic of Foods it was observed that the majority of the schools tended to improvise more when covering proteins and some topics under vitamins and mineral salts e.g.,

vegetables and fruits, followed by carbohydrates, particularly rice. Similar analysis showed that under the topic of water purification and storage, the teachers tended to improvise more when teaching sterilization, followed by both filtration and water softening. The area where least improvisation was done, was in cooling the water.

Finally, it was noted that improvisation in relation to food preservation were mainly in the areas of vegetables and meat. Improvisation was relatively low in the preservation of fruits, fish and in particular legumes and cereals.

The general evaluation of the fore-going analyses and findings depend on the judgement criteria that are being used. However, it can be said that the majority of teachers seemed to have ideas on the type of improvisations they would use when teaching certain aspects of Home Management. Even though, there is still over reliance among the teachers on what they read from books on what to use when teaching the subject, rather than trying to seek alternatives from locally available materials. This as was revealed by some teachers, has led some schools not to tackle some areas in the syllabus or they ignored the practical aspect of the subject when familiar materials or equipment were not available.

Although this general view may be adopted, a lot of improvisation was shown, especially in the area of cleaning materials and equipment. The next task that follows is to establish what may have encouraged those who improvised to do so.

4.3 Factors related to improvisation when teaching Home Management

Analysis of the relationship between improvisation and

information on the years of training to teach Home Science, the experience in teaching the subjects; how long the School has offered the subject; and the size of a practical class in the school, have indicated that:-

a) in most cases teachers who had a longer training programme tended to improvise more than those who had very short period of training (see Figure 1). However, in some cases untrained teachers were associated with high level of improvisation.

Figure 1

Level of Improvisation in relation to the years of Training

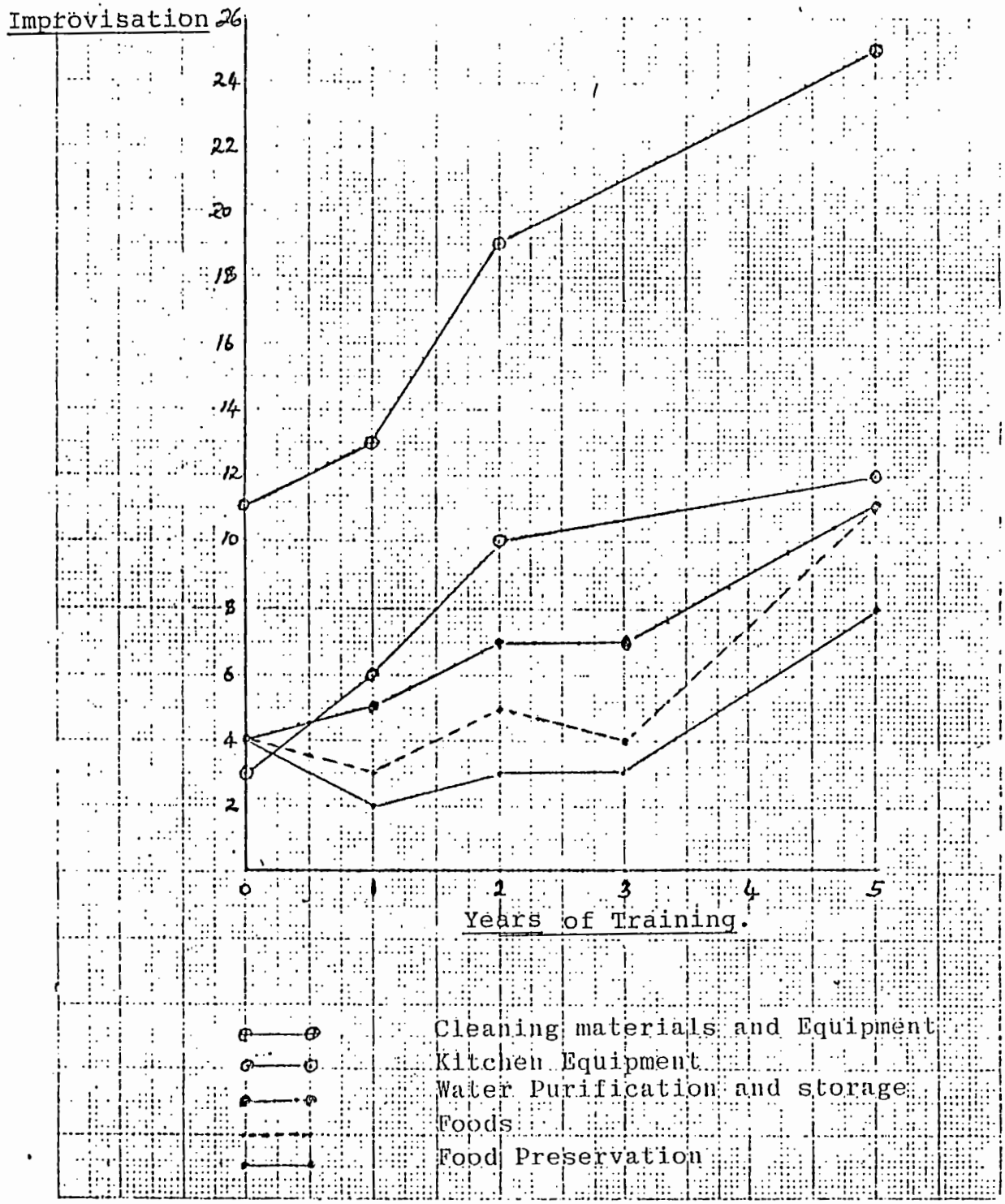


Figure 2

Improvisation in Relation to the Years of Experience

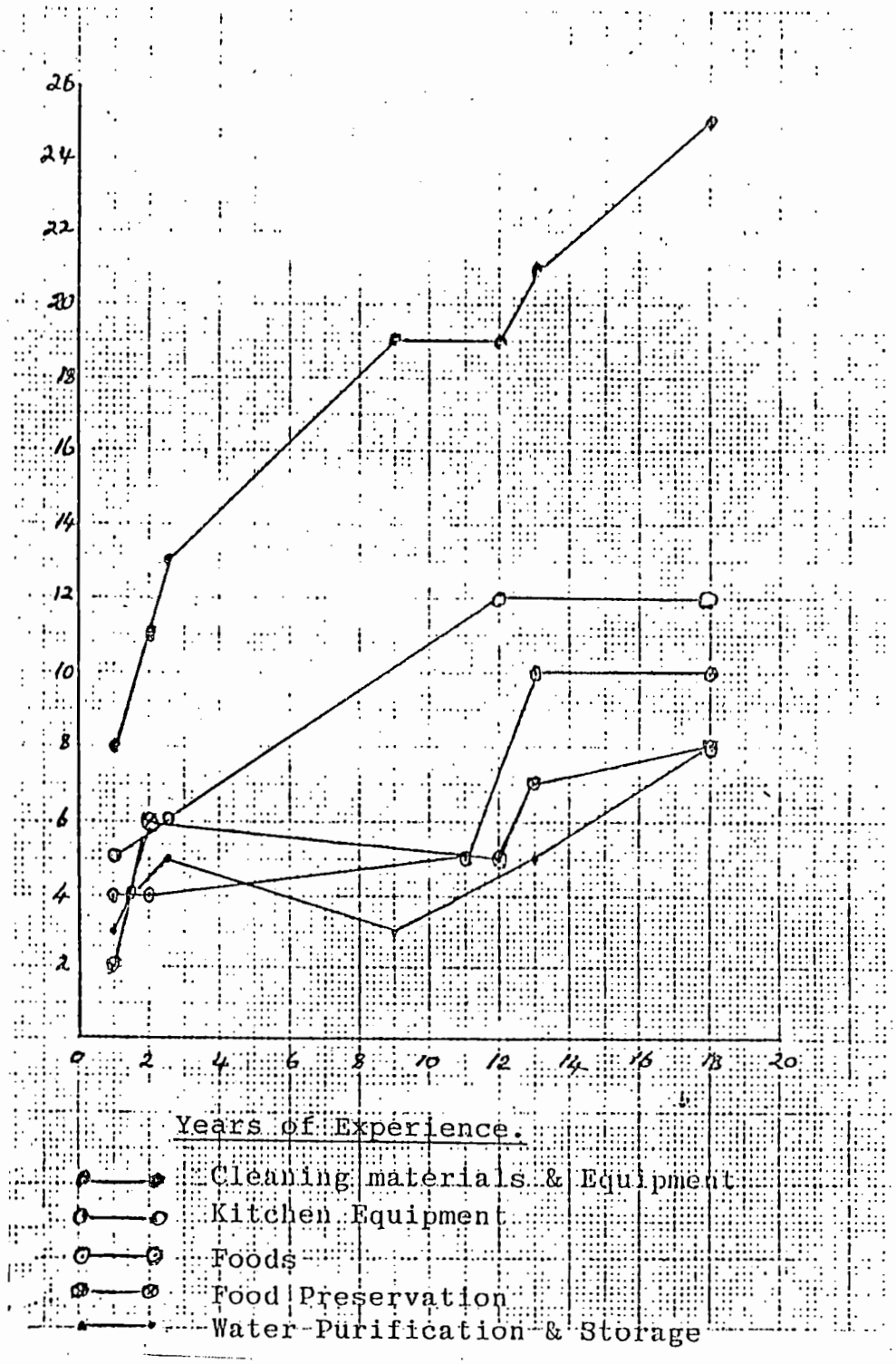


Figure 3

Level of Improvisation in Relation to the number of years the school has offered Home Management.

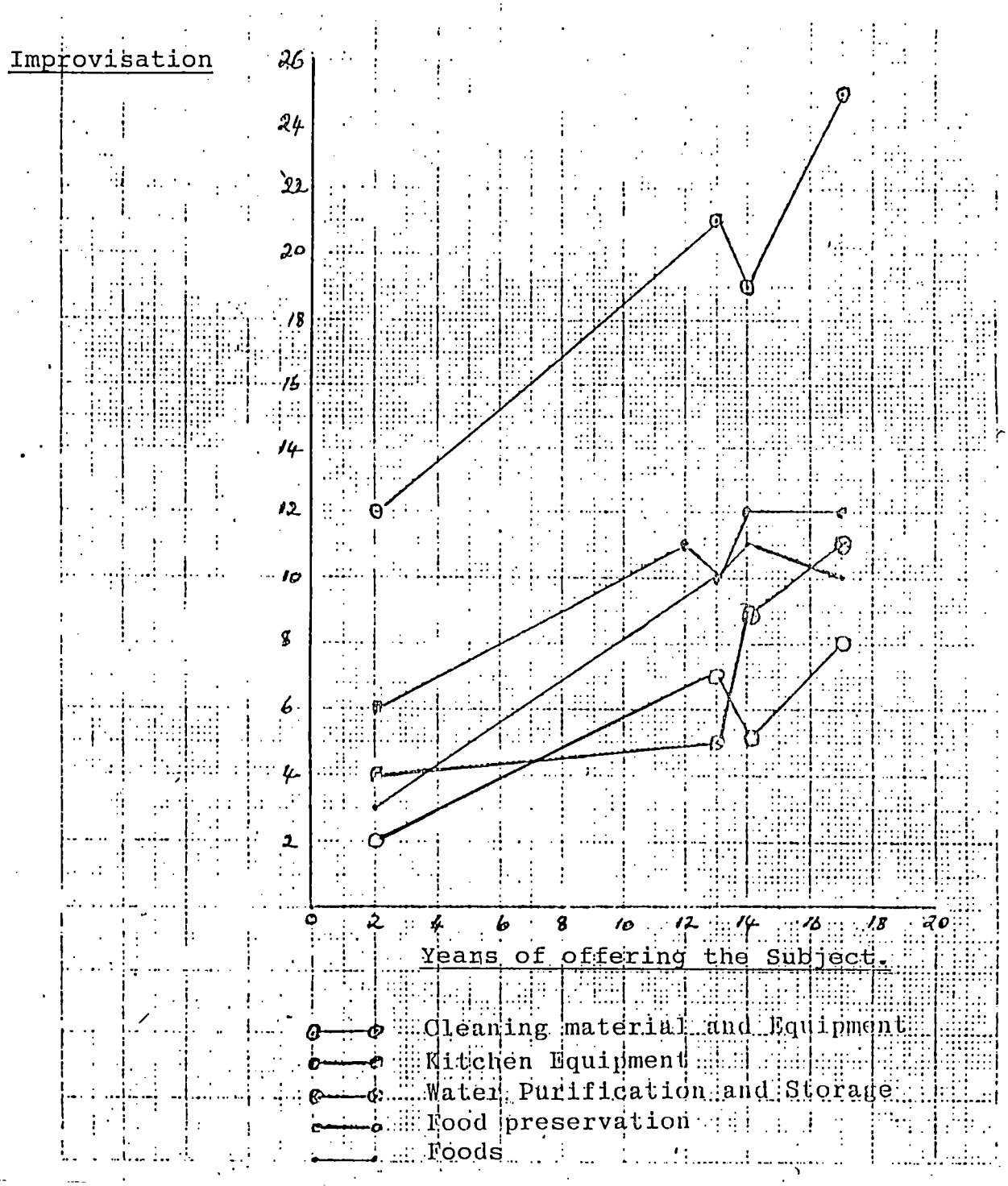
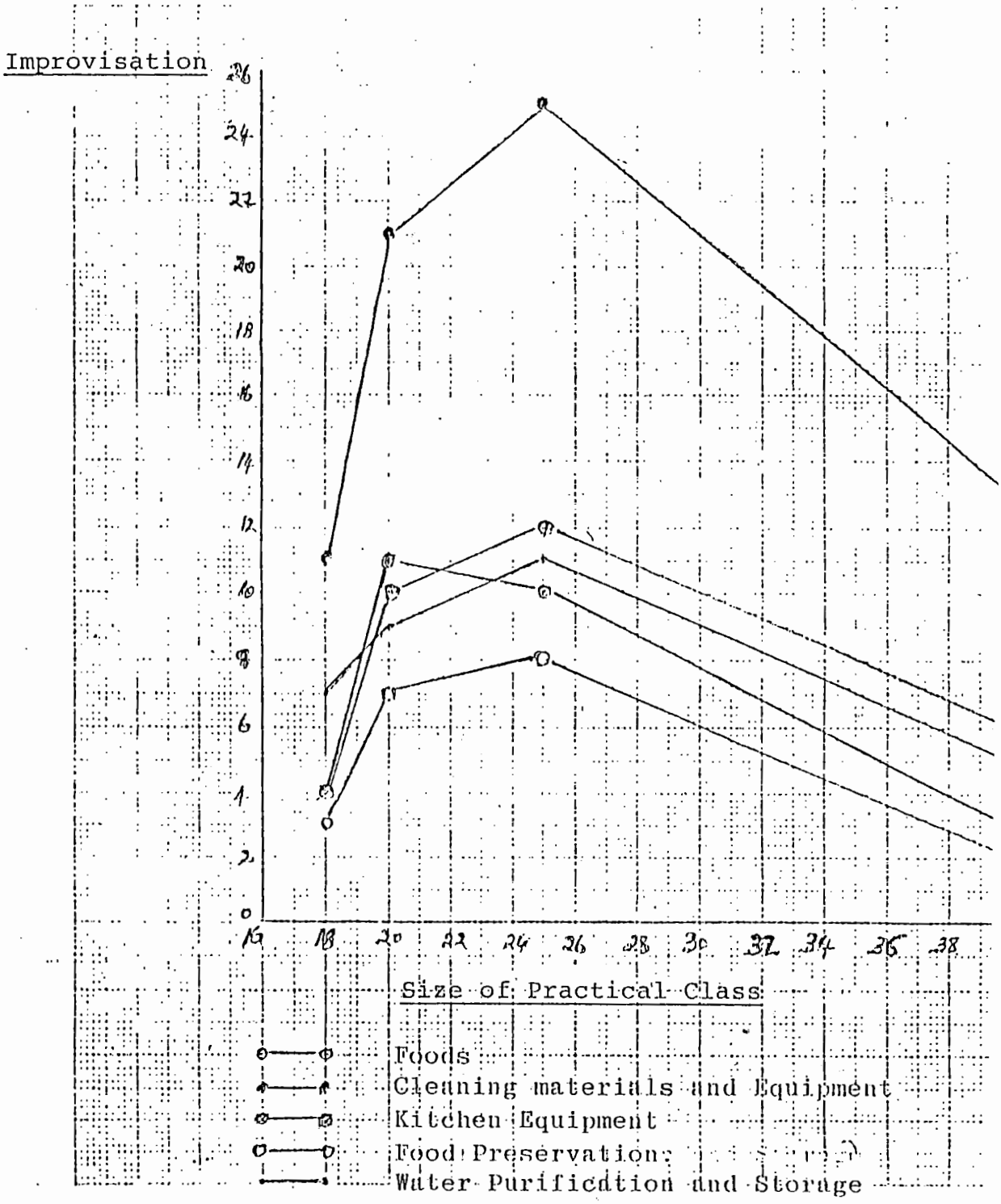


Figure 4

Level of Improvisation in Relation to the size of the Practical Clas



b) Generally experienced teachers tended to improvise more than those with less experience in teaching the subject (see Figure 2). This was particularly so in topics on cleaning materials and equipment. Low levels of improvisation were found to be from schools which had a lot of facilities which nonetheless may not have been relevant to the local needs of the students.

c) The longer the period the school has offered the subject, the more the teachers improvised in the subject (see Figure 3). One would associate this phenomenon with the experience of the particular teacher, although this need to be established by carrying out further research.

d) Teachers with small practical classes tended to improvise less than those teaching large classes. The level of improvisation was found to increase gradually up to a maximum that corresponds with a class size of 25 students, then decreased for classes larger than 25. Low level improvisation from teachers with large practical classes was attributed to the use of theory in teaching rather than practicals. However, for smaller classes (say less than 20) that indicated low level of improvisation this was attributed to the possibility of having enough facilities, in relation to the number of pupils (see Figure 4).

4.4 Proposed alternatives for use in teaching Home Management

Analysis of the proposals from respondents indicated that the majority of them favoured the following as substitutes for the generally used items as indicated in Tables 1 - 6 respectively:-

TABLE 1

LOCAL FOODS POPULARLY USED IN SCHOOLS

AFFLUENT FOODS	PROPOSED SUBSTITUTES	RESPONDENTS (N=40) N	%
Proteins:			
Meat	- Milk	5	12.5
Chicken	- Eggs	20	50.0
Fish	- Pulses (beans, peas pigeon peas, green grams.	34	85.0
	- Different nuts	3	7.5
Carbohydrates			
Rice	- Maize	19	47.5
Wheat flour	- Ugali	26	65.0
Products	- Potatoes	12	65.0
	- Bananas	9	25.5
Breakfast	- Cassava	5	12.5
Cereals	- Yams	2	7.5
	- Sweet Potatoes	23	57.5
(Cornflakes	- Arrow roots	19	47.5
oatmeal	- Sorghum, millet	16	40.0
porridge)	porridge		
Fruits			
	- Local fruits (cultivated and wild)	11	27.5
	- Fruits in season	20	50.0
Vegetables	Local Vegetables		
	- Traditional vegetables	13	32.5
	- Arrow root leaves	2	5.0
	- Aramanth	9	22.5
	- Sukumawiki (kale)	19	47.5
	- Pumpkin leaves	13	32.5
	- Beans leaves	2	5.0
	- Cow peas leaves	7	17.0
	- Cassava leaves	1	2.5

TABLE 2

PROPOSED IMPROVISED METHODS OF PRESERVING FOODS

TYPE OF FOOD	MODERN FACILITIES	PROPOSED IMPROVISING METHODS	RESPONDENTS (N = 40) N	%
vegetables	Refrigerator	- Drying	10	25.0
		- store in cool airy place	15	37.5
		- keeping vegetables by the stock in cold water	16	40.0
		- charcoal cooler	2	5.0
Fruits	"	- Store in cool airy Place	18	45.0
		- Charcoal cooler	2	5.0
		- Drying	6	15.0
Meat	"	- salting	24	70.0
		- drying	7	17.5
		- Hanging in cool airy place	11	27.5
		- smoking	4	10.0
		- charcoal cooler	2	5.0
		- kept when partially cooked	11	27.5
Fish	"	- Drying	16	40.0
		- Smoking	20	50.0
		- Salting	5	12.5
		- charcoal cooler	6	15.0
Legumes/ Cereals	"	- Drying	18	45.0
		- Ashes	14	35.0
		- Store in closed containers	7	17.5

TABLE 3

PROPOSED METHOD OF WATER PURIFICATION AND STORAGE

METHODS	MODERN METHODS	PROPOSED IMPROVISED METHODS	RESPONDENTS (N = 40) N	%
Filteration	Water filter	- Home made filter	13	32.5
		- Muslin cloth	15	12.5
		- Sedimentation	15	37.5
Sterilization	Chemicals e.g. Chlorine	- Boiling	26	6.5
Water softening	Chemicals (borax ammonia, washing soda)	- Boiling	29	72.5
		- rainwater	2	5.0
		- ashes	1	2.5
Water storage	Water tank	- containers e.g.		
		- pots	15	37.5
		- jeryicans	19	45.5
		- drums	6	15.0
		- Home made water jars	5	57.5
Water cooling	Refrigerator	- clay pots	23	10.0
		- water jars	1	2.5
		- charcoal cooler	5	12.5

TABLE 4

PROPOSED IMPROVISED CLEANING MATERIALS AND EQUIPMENT

TASK	MODERN MATERIALS & EQUIPMENT	PROPOSED IMPROVISED MATERIALS & EQUIPMENT	RESPONDENT (N = 40) N	%
Sweeping	brooms and brushes	- twigs	27	67.5
		- tough grass	18	45.5
		- coconut coil	3	7.5
		- palm leaves	3	7.5
Removal of cobweb	cobweb brush	- old clothes tied on a long stick	17	42.5
		- feathers tied on a long stick	2	5.0
		- sisal tied on a long stick	6	15.0
		- long tree branches	16	40.0
Wiping the floor	Floor rugs and mops	- old clothes e.g		
		- cotton clothes	16	40.0
		- blankets	20	50.0
		- sweaters	6	15.0
		- vests	1	2.5
		- towels	1	2.5
		- old sponge mattresses	8	20.5
		- old sacks	11	27.5
cleaning bottle	bottle brush	- sand	4	10.0
		- grass	8	20.0
		- sisal	10	25.0
		- dry seeds	2	5.0
		- ashes	2	5.0
		- pieces of cloth tied on a stick	3	7.5
		- rough leaves	7	17.5
Dusting	dusters, chamois leather etc.	- old piece of clothes	23	57.5
		- left over piece of clothes	5	12.5
		- Fly whisk	1	2.5

TABLE 5

PROPOSED IMPROVISED CLEANING MATERIALS AND EQUIPMENT

TOPIC	MODERN CLEANING MATERIALS AND EQUIPMENT	PROPOSED IMPROVISED MATERIALS AND EQUIPMENT	RESPONDENTS (N = 40) N	%
Abbrasives	scourers (eg. vim)	- rough leaves	5	12.5
		- Ashes	32	80.0
		- Fine Sand	24	60.0
		- Crushed charcoal	12	30.0
		- Crushed egg shells	4	10.0
Cleaning delicate equipment	Sponge	- Sisal fibres	22	55.0
		- left over knitting wool	4	10.0
		- pieces of clothes	17	42.5
		- synthetic sack	2	5.0
Disposal of refuse containers	Dustbins	- Cartons	23	57.5
		- old basins	17	42.5
		- old sufuria	5	12.5
		- old buckets	20	50.0
		- Debes	7	17.5
Cleaning pit latrines	Toilet brush	- twigs	24	60.0
		- tough grass	4	10.0
	Disinfectant	- ashes	19	47.5
		- smoking	11	27.5
		- old battery cells	4	10.0

TABLE 6

PROPOSED IMPROVISED KITCHEN EQUIPMENT

TOPIC	MODERN KITCHEN EQUIPMENT	PROPOSED IMPROVISED KITCHEN EQUIPMENT	RESPONDENTS (N = 40) N	%
Baking	Sieve	- Wire Mesh	9	22.5
		- perforated Tin	2	5.0
	Grates or shredder	- perforated tin	27	67.5
		- knife	4	10.5
	Rolling pin	- bottle	23	57.5
		- smoothened piece of wood	8	20.0
	Oven	- Hole	1	2.5
		- Jiko Oven	12	30.0
		- Sand in a sufuria	7	17.5
		- Debe Oven	17	42.5
Cooking	Sauce pan	- Clay pots	10	25.0
		- Sufuria	23	57.5
		- tins	5	12.5
Cooking	Electricity & gas cookers	- Improved charcoal jikos	24	60.0
		- improved firewood stoves	23	57.5
		- saw dust	6	15.5
		- coffee husks	2	5.0
		- cow dung	1	2.5
		- Biogas	3	7.5
		- Solar	2	5.0

These results imply that there are many alternatives that teachers would seek in case the recommended materials were not available or relevant to the local needs of the learners.

4.5 Analysis of Problems faced when teaching Home Management

As mentioned earlier, one of the major objectives of this study was to find out the various problems faced by Home Management teachers. According to Table 7 some 97.5% of the respondents showed that, limitation of time for gathering and preparing the improvised materials, is a major handicap towards improvisation. Some teachers complained of heavy teaching load which allowed no time for such involvement. Also another major problem was the lack of adequate and appropriate facilities. About 80% of the respondents noted that this problem undermine the practical aspects of the subject, and are forced to concentrate on theory. Other problems that were expressed by 40% and 35% of the respondents respectively were that, the syllabus and textbooks were Western oriented particularly, in their illustrations, and the negative attitude towards the subject especially by the boys, [See Table (7)].

TABLE 7

PROBLEMS FACED WHEN TEACHING THE SPECIFIED ASPECTS OF HOME MANAGEMENT

	PROBLEMS	RESPONDENTS N	%
1.	Lack of adequate and appropriate facilities, therefore, teachers tended to concentrate on theory.	32	80.0
2.	Limitation of time; a lot of time is required for collecting and preparing the improvised materials and equipment. The syllabus is too wide.	39	97.5
3.	Lack of awareness that improvisation of facilities can minimise the problem of lack of equipment.	2	5.0
4.	Lack of support from the Headteachers	3	7.5
5.	The syllabus and some textbooks are western oriented and ignore the local examples,	16	40.0
6.	Negative attitude towards the subject especially boys.	14	35.0
7.	Negative attitude towards local foods and facilities by Home Science teachers.	5	12.5
8.	Lack of information on improvisation	2	5.0
9.	Boarding Schools have difficulties in getting materials to improvise.	1	2.5

Table 7 indicates other problems which were not very commonly expressed, for example, lack of awareness that improvised materials could perform nearly the same job as the actual items. The knowledge of such problems would be beneficial to the teachers as well as the inspectors of Home Science.

4.6 Suggestions for making Home Management relevant to the needs of the students

The results of the analysis of the suggestions by the respondents, on how Home Management could be made relevant to the

needs of the students are presented in Table 8. The table indicates that 77.5% of the respondents recommended the use of cheap locally available materials which could make Home Management relevant to the needs of the students. Also, 60% suggested that the problem of irrelevance of the subject to the students could be alleviated by changing the attitude of the students and teachers that only western equipment were superior. They should be made to understand that local materials are also prestigious, instead of believing that only western materials were best. Only 17.5% of the respondents indicated that text-books should be locally oriented in order to incorporate the needs and the desires of the students. Also, the students should be sensitized enough in course of the teaching, so as to develop the ability to improvise when facilities were not available, or were irrelevant.

Emphasis on practical skills and improvisation in examination were also suggested by 22.5% of the respondents, in each case [Table 8]. Other suggestions such as bringing the Home Environment in the school situation and organization of workshops for the teachers to learn about improvised materials and facilities were also made by 22.5% and 5% of the respondents, respectively.

TABLE 8

SUGGESTIONS ON HOW HOME MANAGEMENT COULD BE MADE RELEVANCE TO THE NEEDS OF THE STUDENTS

SUGGESTIONS	RESPONSES (N=40) N	%
1. The students should be sensitised enough so that if an item is not available or relevant to a given situation, alternatives could be sought.	3	7.5
2. Use of cheap and locally available materials e.g local foods, local cleaning material, home made oven etc.	31	77.5
3. Textbooks and syllabus should be locally oriented in order to be relevant to the needs and circumstances of the students.	7	17.5
4. The attitude of students and teachers should be changed, i.e. only what comes from western societies is the best and prestigious.	24	60.0
5. Emphasis should be made to have kitchen gardens.	5	12.5
6. Practicals should be emphasised so that students could acquire the skills.	9	22.5
7. Improvisation should be emphasised in examinations	9	22.5
8. During parent days, students should demonstrate to the parents how to use improvised materials and equipment especially foodstuffs.	2	5.0
9. Organize workshops for the teachers to learn about improvised materials and facilities	2	5.0
10. Try to bring the home environment in school situation and try to improve what they have at home.	9	22.5

Such suggestions would help the new trained teachers of Home Management, and also those entrusted with the development of teaching materials and Home Science syllabus.

The foregoing findings reveal that the teachers had ideas

on the type of improvisations which could substitute the modern facilities but did not apply this knowledge practically in the classroom. As a result they relied more on the theoretical aspect of the subject since most of the schools had inadequate facilities. However, this is not the case with the topics on 'Cleaning materials and equipment' since many of the teachers improvised where the recommended modern facilities were not available. Secondly, it may also be noted that more years of training, particularly at Graduate level, coupled with the years of teaching the subject, and the size of the practical class, contribute greatly to the level of improvisation by the teachers.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The main conclusion of the study is that there is some improvisation in teaching the specified aspects of Home Management especially in cleaning materials and equipment. However, teachers should be encouraged to improvise more in the other aspects of Home Management, since various results confirm that there are several alternatives which they have not been applying.

In spite of the possibility of improvising in these subject areas, teachers face several problems such as lack of facilities, shortage of time for gathering and preparing improvised materials, and lack of awareness of the adequacy of the improvised materials.

Other conclusions that were arrived at in this study were that the professional training, as well as the years of experience of the teacher increase his/her level of improvisation.

Another question which the results of this study have attempted to answer is whether increased size of Home Management classes in our secondary schools leads teachers to improvise. The results have led to the conclusion that teachers handling large classes improvised less than those teaching small classes since they tend to use theory rather than the practical approach when teaching.

Finally, the study has permitted the conclusion that the majority of the teachers would prefer the use of cheap and

locally available materials which could make Home Management subjects relevant to the future needs of the students. Teachers also felt that this could be enhanced by use of books with local examples, and by the change of the negative attitude towards the use of local materials in favour of the western materials, in our schools.

5.2 Implications of the study to the Teaching of Home Management

A number of implications for the teaching of Home Management in our secondary schools may be noted here as a result of the findings from this study:

1. that provision be made for inservice training or short refresher courses so as to help the majority of teachers who were found not to be aware of the type of improvisations they could use when teaching certain aspects of the subject;

2. that there is need for the curriculum developers and inspectorate to change policy on the recommended teaching materials that are western oriented to those that may be familiar to the Kenyan students;

3. that teacher trainees in the Colleges and Universities, should be encouraged to emphasise on innovations as well as use of community resources which are adaptable to the local situations, since the current training methods do not seem to develop a positive attitude for the use of the local materials nor do they develop an innovative mind;

4. that there is need for workshops where teachers could have a forum of exchange of ideas on the possible alternatives from their localities;

5. that in order to encourage improvisation in schools the National Examinations should emphasise the improvised materials and equipment instead of focusing on the modern facilities only, so as to solve the problem of inadequate and irrelevant materials and equipment being used in the teaching of Home Management in our schools.

5.3 Recommendations for further Research

In this study a number of issues were raised which were not tackled due to the scope of the study. Therefore, a number of

recommendations are made to delineate the direction for future research in this area. Researchers should try and investigate:-

1. The effect of teachers' attitudes towards improvisation, when teaching Home Management.
2. The impact of the improvisation in the teaching of Home Management to the students and their communities.
3. The responses of Home Science students in a similar study, to validate the responses of the teachers.

Finally, there is also need to carry out a similar survey where a large samples of schools and teachers are involved, in order to help in the generalization of the above findings, and for other areas of Home Science.

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APPENDIX 1

TEACHER'S QUESTIONNAIRE

This is a research project to find out the various improvisations the teachers make when teaching Home Management in our Secondary Schools. It will also elicit information on how improvisations may contribute to rural and community development. Your contribution and experience in this exercise will benefit other teachers of the subject and community as a whole.

PART I

General information about teaching of Home Management

1. Name of the School .....
2. Number of years the school has offered Home Science .....
3. Average size of the Home Science Practical Class/Classes in the school .....
4. Indicate how long you have taught Home Science in years:
   .....
5. Number of years of training to teach the subject: .....
6. Post-Secondary training:

   University [ ]

   College [ ]

   Polytechnic [ ]

7. Indicate by a tick ( ) your qualifications in Home Science.

   Certificate [ ]

   Diploma [ ]

   Degree [ ]

8. Tick ( ) the area(s) of Home Science you are teaching and specify the period:

Home Management .....months/years taught

Clothing and Textiles .....months/years taught

Foods and Nutrition .....months/years taught

Specify others .....months/years taught

9. a) Tick ( ) any of the following topics you have covered in class:

i) Meal Management [ ]

ii) Food Preservation and storage [ ]

iii) Water purification and storage [ ]

iv) Cleaning material and equipment and [ ]

v) Kitchen equipment. [ ]

10. What are some of the problems faced when teaching the above topics?

i) .....

.....

ii) .....

.....

iii) .....

.....

iv) .....

.....

v) .....

.....

Others specify .....

11. In what ways could Home Management be made relevant to the needs of the students after they leave school?

i) .....

.....

ii) .....

.....

iii) .....

.....

iv) .....

.....

v) .....

.....

Others specify .....

Part 2-7 of the questionnaire involves the analysis of the various improvisations the teachers make when teaching the specified aspects of the Home Management i.e.

i) Meal Management
ii) Food preservation and storage
iii) Water purification and storage
iv) Cleaning materials and equipment and
v) Kitchen equipment.

Please fill in the spaces provided under each part the information on the type of improvisations used, reasons for improvisation, problems faced when improvising and teaching methods

PART 2:LOCAL FOOD ITEMS EMPHASISED IN MEAL MANAGEMENT

FOOD GROUPS	AFFLUENT TYPES OF FOODS PRESERVING FOOD	LOCAL FOODS (IMPROVISATIONS)	REASONS FOR IMPROVISING	PROBLEMS FACED WHEN IMPROVISING	METHODS OF TEACHING		
					PRACTICAL	THEORY	NONE
Proteins	Meat,Chicken and fish						
Carbohyd-rates	Cereals (conflakes Oatmeal porrige)						
	Bread						
	Rice						
Vitamins & mineral salts	Vegetables						
	Fruits						

PART 3:THE METHODS USED TO PRESERVE DIFFERENT FOODS AND THE VARIOUS IMPROVISATIONS MADE

TOPIC	MODERN EQUIPMENT FOR PRESERVING FOOD	IMPROVISATIONS (alternative methods)	REASONS FOR IMPROVISING	PROBLEMS FACED WHEN IMPROVISING	METHODS OF TEACHING		
					PRACTICAL	THEORY	NONE
Vegetable	Refrigerator						
Fruits	Refrigerator						
Meat	Refrigerator						
Fish	Refrigerator						
Legumes Cereals	Refrigerator						

PART 4:METHODS OF WATER PURIFICATION AND STORAGE

TOPIC	MODERN MATERIALS & EQUIPMENT FOR WATER PURIFICATION	IMPROVISATIONS	REASONS FOR IMPROVISING	PROBLEMS FACED WHEN IMPROVISING	METHODS OF TEACHING		
					PRACTICAL	THEORY	NONE
Filteration	Water filter						
Steriliz-ation	Chemicals (e.g chlorine)						
Water Softening	Chemicals (borax, ammonia,washing soda)						
Water storage	Tank						
cooling the water	Refrigerator						

PART 5:MATERIALS AND EQUIPMENT FOR CLEANING THE HOUSE

TOPIC	MODERN CLEANING MATERIALS AND EQUIPMENT	IMPROVISATIONS	REASONS FOR IMPROVISING	PROBLEMS FACED WHEN IMPROVISING	METHODS OF TEACHING		
					PRACTICAL	THEORY	NONE
Sweeping	-brooms -brushes						
Removal of cobweb	-cobweb -brush						
Wiping the floor	-Floor rugs -mops						
Cleaning bottle	-bottle brush						
Dusting water	-Dusters,chamois leather						

PART 6:MATERIALS AND EQUIPMENT FOR CLEANING THE HOUSE

TOPIC	MODERN MATERIALS MATERIALS AND EQUIPMENT	IMPROVISATIONS	REASONS FOR IMPROVISING	PROBLEMS FACED WHEN IMPROVISING	METHODS OF TEACHING		
					PRACTICAL	THEORY	NONE
Abrassives	Scourers (e.g via)						
cleaning delicate equipment	Sponge						
Disposal of refuse containers	Dustbins						
Pit latrines	Toilet brushes						
Pit latrines	Disinfectant						

PART 7:KITCHEN EQUIPMENT

TOPIC	MODERN KITCHEN EQUIPMENT	IMPROVISATIONS	REASONS FOR IMPROVISING	PROBLEMS FACED WHEN IMPROVISING	METHODS OF TEACHING		
					PRACTICAL	THEORY	NONE
Baking	Sieve						
	Grater or shredder						
	Rolling pins						
	ovens						
Cooking	Sauce pans						
Cooking fuel	Electric and gas cookers						

APPENDIX 2

LIST OF SCHOOLS FOR THE STUDY

A. Schools used in the Pilot Study

1. Kilimo High School
2. Njoro Girls High School
3. St. Xavier Secondary School
4. Menengai High School
5. Lake Nakuru Day High School
6. Langa Langa High School.

B Schools used in the Main Study

1. Trikha High School
2. Ruiru High School
3. Senior Chief Koinange
4. Chania High School
5. Loreto High School (Kiambu)
6. Equator High School
7. Thika High School for the Blind
8. St. Francis Mang'u
9. Mary Hill High School
10. Kanunga High School
11. Mugoiri High School
12. Koimbi Secondary School
13. Kiru Mixed Secondary School
14. Kiria-ini Secondary School
15. Njumbi High School
16. Kibutha Secondary School
17. Kanyenya-ini Secondary School
18. Muguru Secondary School
19. Nginda Girls Secondary School
20. Mumbi Girls Secondary School
21. Chinga Girls Secondary School
22. Othaya Girls Secondary School
23. Kianjogu Secondary School
24. Kiaritha-ini Secondary School
25. Tumu-Tumu High School
26. Ruringu Secondary School
27. Moi Nyeri Complex
28. Gathera Secondary School
29. Giakanja Secondary School
30. Birithia Secondary School
31. Njenga Karume Secondary School
32. Larmudiac Secondary School
33. Molo Secondary School
34. Moi High School Kabarak
35. Flamingo Secondary School
36. Moi Secondary School
37. Jomo Kenyatta High School
38. Mary Mount Secondary School
39. Bahati Secondary School
40. Nakuru West Secondary School.